

Domestic Regulation and International Competitiveness

Presented at a conference at Harvard University (May 1980)

I. Introduction

Two perceptions join the debate over regulation in the United States with the debate over our declining productivity and international competitiveness. First, it is widely believed that the growth of regulation has seriously hindered domestic firms in competing with foreign rivals. Casual evidence for this view is that the newer programs of health, safety, and environmental regulation first began to impose heavy costs on American industry in the early 1970s, just when our productivity growth began to decline sharply relative to that of other Western industrial economies. Second, it is also widely believed that our major economic competitors, especially Japan and West Germany, have been far more successful than we have been in reconciling environmental (and other regulatory) goals with economic performance. This view is usually supported by contrasting the highly formal, protracted, and adversarial style of business regulation in the United States with the more informal, pragmatic, and consensual approach of other industrial democracies. This paper analyzes these two views. At the outset, however, it must be said that the evidence on both points is fragmentary and that we shall therefore be left to speculate as intelligently as we can. For this reason it will be useful to begin with a discussion of some general propositions concerning regulation and economic competition in domestic and international markets.

II. Regulation, Productivity, and International Competitiveness

What is the general relationship between government regulation and the productivity of the economy? There is a standard answer to this question among students of regulation which goes a long way toward illuminating the further issue of international competitiveness. The answer is in two parts: (A) In theory, the very purpose of regulation is to increase productivity in the sense of increasing the efficiency and hence total output of the economy. (B) In practice, however, regulation frequently—some would say typically—operates to decrease productivity and competitiveness.

A. Regulation in Theory

The first part of this answer is straightforward, provided we understand that "in theory" is strictly normative: increasing productivity is what economists say regulation should be about when they write their articles and textbooks, and it is what regulators say they are about when they hand down their decisions and give speeches and congressional testimony. Consider the oldest form of regulation, the control of prices and profits of "natural monopolies" such as power and communications utilities. Here the formal aim of regulation is precisely to make monopoly markets behave as if they were competitive—to compress monopolists' prices down to their costs and thus to produce the higher output that is the natural result of price rivalry in competitive markets. If the

process works as advertised, its result is to extract greater social productivity from the resources employed in serving monopoly markets.

Similar though less obvious economic rationales underlie the newer programs of health, safety, and environmental regulation often described as "social regulation." Minimum safety standards for drugs, food additives, and other consumer products may compensate for the inability of consumers to assess the quality of products that are esoteric and may present latent hazards. In the absence of standards some consumers will decline to purchase such products at prices equal to their costs of production. Minimum standards, in giving consumers an assurance of minimum product quality, may increase demand enough that the "regulated" markets are larger and more efficient even at the higher prices occasioned by the standards. In the same fashion, workplace safety and health standards may increase the efficiency of labor markets, thus decreasing total production costs in spite of the added costs of complying with the standards.

Some degree of environmental regulation is also economically appropriate so long as markets in the use of air and water are technically infeasible. Pollution controls, unlike workplace safety and health controls, add to firms' production costs without yielding significant compensating benefits to the firms themselves; their unambiguous effect is therefore to raise prices and reduce output in product markets, in the same manner as an outright tax on factors of production. At the same time, however, pollution controls fulfill demands for cleaner air and water which would otherwise be ignored, and in principle they should provide just the degree of cleanliness that would be purchased at the market price in competitive air and water markets. Douglas Costle, the Administrator of the Environmental Protection Agency during the Carter Administration, often said that his agency's function was simply to correct this sort of "market imperfection." If this is all EPA does, then it is increasing productivity and the real total output of the United States economy—taken comprehensively to include not just measured GNP but all things people value enough to be willing to purchase at cost.

The reason for focusing on the normative aspect of regulation is to bring out the important point that regulation is in principle compatible with—indeed supportive of—productivity and international competitiveness. Imagine that all natural monopolies were regulated in the United States strictly according to economic principle and were unregulated throughout the rest of the world. The result would be that monopoly firms in the United States would produce at higher levels of output and lower prices than their foreign counterparts.[1] Of course the domestic and foreign firms would not be competing directly with each other in any world market. If they were competing they would not, by definition, be true monopolies at all. But in each nation the monopoly industries—typically infrastructure industries such as transportation, communications, and power distribution whose markets are wholly domestic—would be providing critical inputs into service, manufacturing, and agricultural industries that were competing in world markets. Other things being equal, production costs in these domestic industries would be lower than the costs of their foreign competitors; their world market shares would be larger than if domestic monopolies were unregulated or if foreign monopolies were regulated.

By the same analysis, appropriate health and safety regulation in domestic markets would yield a cost advantage to U.S. firms competing in international markets. While domestic firms would incur costs in complying with such regulations, the costs would be more than offset by compensating cost reductions and other benefits. In the case of labor markets, the costs of meeting workplace standards would be repaid by such benefits as lower wage rates, more skilled and productive workers, and reduced workmens' compensation payments. In the case of intermediate products, the costs of meeting quality standards would be repaid by such benefits as improved quality and reliability and reduced product-liability payments.

There may be a tendency, given the enormous costs of current regulatory programs concerned with safety and health, to scoff at these suggestions even as theoretical possibilities. So it is worth recalling that the vast bulk of safety and health standards in the United States consist of voluntary agreements among producers themselves, usually through the mediation and technical assistance of trade associations or independent organizations such as the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), and Underwriters Laboratories (UL). We may presume that such voluntary standards are worth their costs to the producers, else they would not have agreed to them. Generally speaking, and putting aside an important complication to be discussed later on, this means that the standards increase market demand and output, making the domestic economy more efficient and productive. And there its no reason in principle to say that government-mandated standards cannot have a similar effect. It is entirely plausible that a public agency could establish a safety standard that producing firms would not agree to on their own because of organization and negotiation costs and differences of interest among firms, but that is nevertheless in the firms' collective interest and in the interest of consumers as well. Of course, many government standards pertaining to safety and health, such as municipal fire codes and state and federal workplace and product regulations, are simply adoptions of voluntary private standards. In turn, a number of private standard setting programs are the result of government efforts to encourage product simplification and interchangeability initiated by Herbert Hoover when he was Secretary of Commerce in the 1920s.[2]

Safety and other quality regulations applied to products competing directly in international markets would also assist domestic firms if the result was to give buyers in these markets a desired assurance of product quality. A good example is the experience of Japanese goods in world markets after World War II, when the label "Made in Japan" had come to imply "Cheap Imitation." During the 1950s the Japanese government established a program of rigorous quality standards and inspection of a large share of export products, bestowing the "JIS" (Japanese Industrial Standard) seal upon conforming products. By the late 1960s the program had substantially alleviated the traditional wariness toward Japanese goods, to some degree transforming the wariness into positive preference, and had played an important part in boosting Japanese exports.[3]

Another example concerns wine. Today several California wines are as good as the best French wines, but the variance in the quality of California wines is greater than that of

French wines and much greater than that of wines from well-known regions of France. So if you stop to purchase a bottle of wine on your way to a friend's house for dinner, and you are not an expert, you may hesitate to purchase a California wine with an unknown label because you don't know exactly what you will be getting. The French labels are also unfamiliar and are more expensive than most of the Californias, but you may know that a Beaujolais ("Appellation Beaujolais Controlee") will be pretty good—no possibility of embarrassment—and that a St.-Emilion ("Appellation St.-Emilion Controlee") will be superb. The French regulatory system enables consumers to be more discriminating when they purchase French wines. Consumers sometimes will and sometimes will not be willing to pay the premium for this assurance, but the net effect is surely to increase world demand for French wines over what it would be without regulation.

Finally, environmental regulations almost certainly contribute directly to the international competitiveness of the domestic economy to some extent. Cleaner air than we would have with no regulation is in part an intermediate good: it has direct economic benefits, such as improved health and shorter commuting times (workers living closer to their places of work), that yield an unambiguous net reduction in the costs of domestic production of goods sold in international markets. A government official charged solely with promoting exports would be an enthusiastic champion of this amount of pollution control. This amount does not, however, exhaust the possibilities of economically beneficial environmental quality, which is the amount individuals would pay for in well-developed markets for the use of air and water. Cleaner air and water is to some degree a matter of final consumption rather than an intermediate good, meaning that individuals want it and are willing to pay for it simply for the pleasure it gives—like an art reproduction for the living room or a bottle of St.-Emilion—entirely apart from any measurable contribution to productive endeavor. If we distinguish between the "production margin" and the "consumption margin" of pollution controls applied in one nation's economy, the "consumption margin" will burden rather than enhance the economy's competitiveness in international markets. The control costs of the "consumption margin" yield a product that is entirely consumed within the nation, leaving nothing of direct or indirect value to foreigners.

Our export official will oppose the "consumption margin" of pollution controls as vigorously as he favors the "production margin," but his view is economically myopic. There is no reason to distinguish between cleaner air for its own sake and other kinds of products, such as many personal services, whose production and consumption are entirely domestic. We could, for example, restrict lawn mowing, window washing, and dry cleaning, or ban them altogether. The effect would be to stimulate exports, since some of the people and other resources engaged in providing these services would then enter markets for the production of goods sold abroad. But our nation would be poorer as a result. It is important to realize that the amount people are willing to pay for cleaner air is influenced by their wealth, and that their wealth is in turn influenced by their productivity in international markets. Expenditures on the "consumption margin" of pollution control permit individuals to consume more clean air but less French wine, English woolsens, or Brazilian coffee. To limit domestic consumption of as much clean air, or clean windows, as individuals are willing to pay for is to tax one's citizens in order to subsidize citizens of

other nations. If anything, a nation's economic interest may be to consume "too much" in the way of environmental amenities by taxing foreign consumers. Suppose that the United States was the world's sole producer of coal, that foreign demand for our coal was extremely inelastic, and that the production of coal generated heavy pollution within the United States. It would then be in our interest—although over the objections of our export official—to restrict pollution in the coal industry more than if it were only purchased domestically. We could, in effect, tax foreign consumers for the sake of domestic consumption.

B. Regulation in Practice

The second proposition asserted at the beginning of this section was that regulation in practice often reduces economic productivity. This is obviously the more important aspect of regulation and productivity; what is less obvious is whether it is a peculiarity of our own political system or is inherent in the nature of regulation itself. We do know that, in a liberal democracy such as ours where the right to petition government is axiomatic, small, cohesive groups are able to manipulate the machinery of government to their advantage, and that they often do so through regulation rather than the more conspicuous approach of obtaining outright public subsidies. Thus price controls are often applied to markets without a trace of monopoly power, such as markets for truck transportation, rental apartments, insurance, and numerous agricultural commodities, sometimes at the behest of producers and other times of consumers. Regulatory programs such as these are always swathed in the rhetoric of economic welfare and the public interest, but their actual effect is to enrich particular groups at the expense of others and in the process to retard rather than enhance economic production.

A separate problem is that government policy making—large public organizations making decisions on behalf of large populations—tends to be exceedingly risk averse, far more so than the decisions of individuals in their private capacities. An interesting example is the 1962 federal drug amendments in the United States, which require the Food and Drug Administration to determine that all new drugs are effective prior to marketing. Before the amendments, the FDA had to determine only that new drugs were safe before they could be marketed; since 1962 it has had to determine also that new drugs possess the therapeutic characteristics indicated by manufacturers. A study by Sam Peltzman of the effects of proof-of-efficacy regulation found that it replicated the traditional, overcautious approach of hospital formulary committees in adopting new drugs. Before 1962, physicians making independent drug-prescription decisions for individual patients tended to adopt effective new drugs years earlier than hospital formulary committees making hospital-wide decisions on drug purchases. After 1962, the national rate of introduction of new drugs fell abruptly to approximately the pre-1962 adoption rate of the formulary committees.[4] Excessive conservatism appears to be a chronic feature of safety regulation. Recent examples include the ban on saccharin and the automobile seatbelt-ignition interlock requirement, both scuttled by Congress after heated consumer protests, and the Consumer Product Safety Commission's proposed requirement that rotary lawn mowers be equipped to halt the motion of the blade in three seconds whenever the operator removes his hands from the mower handle.

One important reason for problems such as these is the inherent difficulty of reducing abstract economic ideas (those discussed in the previous section) to practice through administrative action. There is no question that a firm with monopoly power can and will restrict output and raise price, and that the result will be damaging to the rest of the economy both domestically and in international markets. But it is another matter altogether for a regulatory commission to eliminate the damage by calculating the firm's true economic costs and coming up with a price schedule that covers those costs, and nothing more, efficiently. For one thing, the cost information is largely a by-product of the competitive process whose absence is the very problem being addressed. Economists can demonstrate with elegance and precision that levels of product safety will be too low and levels of pollution too high in markets with stipulated characteristics, but regulators have no very precise means for determining the economically "correct" levels in actual markets. They may refer to consumer surveys or accident statistics, or compare property values among cities with more or less air pollution, but it is virtually impossible to translate such information into specific regulatory standards.

With only the most abstract norms to guide them, regulators (and their bosses the legislators) are left to make narrow, case-by-case judgments as best they can, in an environment where the survivors are those best at maintaining and enhancing their political support. As a result, regulation is as likely to sacrifice as to promote economic efficiency, either out of simple human misjudgment or for the sake of the day's cause, be it the cause of the Consumers Union or the Maritime Union. Even in the purest natural monopoly markets we can observe regulated price structures which benefit some groups at the expense of others, and can only guess whether, on balance, output is really greater than it would be with no regulation at all. Safety and environmental regulations often seem designed to countervene rather than enhance markets. While markets force us to compromise our limitless desires for various goods, and thus encourage moderation and balance, regulatory standards tend to be cast in extremes which express only the abstract desire—"best control technology," "zero discharge," "lowest feasible emissions," the "zero cancer risk" Delaney Amendment, and so on. And regulatory enforcement strategies, such as EPA's "new source performance standards," tend to be politically opportunistic at the expense of economic productivity, focusing the strictest control requirements on new and dynamic technologies yet to develop active political constituencies.

While the inherent difficulty of fine-tuning markets by administrative regulation is a universal phenomenon, its consequences may vary among political systems. Some political systems, such as those in smaller nations with homogeneous populations and strong authoritarian traditions, are probably less prone to self-interested manipulation by organized factions, so that regulation is less apt to interfere seriously with the efficiency of the economic system. If so, the important questions are whether the salient features of these systems can be identified and whether they are transferable. Both questions present immense difficulties; consider that smaller, more homogeneous societies tend to have more extensive programs of social insurance, which should both reduce demands for regulatory redistributions and increase the tendency of government agencies to be

excessively cautious in setting health and safety standards. In any event, it ought to be clear that the productivity of one nation's economy is not compromised by regulation per se, but only by immoderate regulation. The competitive position of the U.S. economy will not be improved simply by reducing regulation—although a great deal of reduction is obviously in order—but rather by directing it to the task of improving the efficiency of all domestic markets.

III. The Effect of Regulation on U.S. Competitiveness

Regulation touches every major industry in the industrial democracies, and no comprehensive assessment has ever been attempted of the effects of all of the various regulatory regimes on international trade. We do know that U.S. economic regulation of utilities, major transportation modes, and a few other industries has sometimes been more successful and sometimes less successful than similar regulation in Europe and Japan. In the United States, state and federal regulatory agencies have only recently begun to promote economically efficient price structures for electrical utilities, such as peak-load pricing, long in use in France's nationalized electrical system and elsewhere. On the other hand, our regulated telephone system appears to offer better quality service at lower cost than the systems (usually post-office subsidiaries) of other nations. Until recently the trucking industry was heavily regulated in the United States but unregulated in most other countries—apparently to our disadvantage—while we are unique in having begun to deregulate air transportation—apparently to our advantage.[5] Our use of price controls and administrative allocation to attempt to mitigate the effects of the past decade's oil price increases has been a major mistake that has hurt us domestically and in international markets[6]; we would have been wise to abstain from this form of regulation in the manner of some of our trading competitors (although our problem has probably not been lack of wisdom but the presence of a large domestic oil industry that has made distributive issues more important here than in other nations).

We also know that some health and safety regulations have diminished U.S. productivity relative to that of other industrialized economies. The best documented instance is the 1962 drug amendments, mentioned earlier, which require pre-marketing proof of efficacy of drugs sold in the United States. The effect is to make it more costly to introduce new drugs in the U.S.—apparently without commensurate benefits—than in other countries which regulate only drug safety. When the rate of introduction of new drugs declined sharply in the U.S. after the 1962 amendments, proponents of the new requirement maintained that the decline was a coincidental, worldwide phenomenon, the result of a depletion of research opportunities after the pharmaceutical boom of the 1950s and the introduction of more sophisticated and costly drug testing techniques. But subsequent research showed that the U.S. regulatory scheme had indeed had an independent effect: in the United Kingdom, which does not require pre-marketing proof of efficacy, the productivity of research and development investments (measured by the new chemical entities introduced per dollar of R&D expenditure) declined threefold in the 1960s, while productivity in the United States declined sixfold during the same period.[7]

Of course, the major issue concerning regulation and U.S. productivity is the effect of the newer programs of health, safety, and environmental regulation. Since the early 1970s, when the Environmental Protection Agency and the Occupational Safety and Health Administration were established (along with several additional regulatory programs covering the automobile and mining industries), U.S. firms have been required to invest many billions of dollars each year to comply with new regulatory standards. Current annual expenditures are about \$56 billion under all environmental quality programs, and about \$4 billion for employee safety and health.[8] The period since 1973 has also been marked by very poor aggregate economic performance: the annual growth of measured productivity (output per unit of input according to the national income and product accounts) has been about half of that during the previous quarter century since World War II, and productivity has declined absolutely in some recent periods. Clearly if the new regulatory controls have been a substantial cause of our flagging measured productivity they have also reduced our competitiveness in international markets.

TABLE 1

1975 AIR QUALITY OBJECTIVES IN SELECTED COUNTRIES

	S02. (m) (ppm)	Particulates (mg/m3)	No2 (ppm)
U.S.	.14	.26	.13 (approx.)
Japan	.04	.10	.02
Germany	.06	NA	.15 (approx.)
France	.38	.35	NA
Italy	.15	.30	NA
Canada	.06	.12	.10

(all figures are average daily values)

TABLE 2

Automobile Emissions Standards in Selected Countries

	CO (g/km)	HC (g/km)	No (/g kmx)
U.S. (1975 federal)	9.30	.93	1.93
U.S. (1975 Calif.)	5.60	.56	1.24
Japan (1976)	2.10	.25	.60/.85*
Japan (1978)	2.10	.25	.25
Canada (1975)	15.62	1.25	1.94
Canada ("future")	2.13	.25	1.94

*standard according to auto weight

Source for both tables: OECD, Environmental Policies in Japan, Paris, April 21, 1977.

Such evidence as can be reduced to numbers, however, fails to convict the newer regulatory programs of being major culprits in diminishing U.S. competitiveness. For example, the tables on the following page show that U.S. air quality objectives and automobile emissions standards have been no more rigorous than those of several of our

trade competitors. And consider the following facts contained in a 1978 paper written by and EPA official in his private capacity.[9]

- Between 1971 and 1975 pollution control expenditures approached one percent of GNP in West Germany and Sweden as well as in the United States.
- In 1978 private investment in pollution control plant and equipment was between \$7 and \$8 billion both in the United States and Japan.
- According to a Department of Commerce study, the U.S. market for pollution control equipment is one-half of the world market.
- According to a Federal Trade Commission study, between 1973 and 1975 capital expenditures for pollution control were 18 percent of total capital expenditures in the Japanese steel industry and 14 percent in the U.S. steel industry.

These figures are nothing more than suggestive; international comparisons such as these are notoriously unreliable since both reporting methods and enforcement procedures vary greatly among countries. It is well known, for example, that while Japanese automobile emissions standards are stricter than ours, their procedures for testing actual compliance are much looser. But casual supporting evidence is abundant—the ease with which foreign automobile manufacturers have met U.S. safety and pollution standards, the relatively greater political strength of labor unions in European nations, the early imposition of an effluent fee system in the Rhur Valley, and the Japanese compensation law under which firms have been obliged to make generous compensation to individuals injured by pollution. If anything, the relative abundance of natural resources in the United States ought to give us a natural economic advantage in pollution control over other nations. Pollution is substantially a local phenomenon—more so than is generally acknowledged—and a strong function of population density, so a nation with more air, land, and water per capita can achieve a given air or water quality level at lower per capita cost. In any event, it is clear that American experience with costly environmental and workplace controls is not radically different from that of our major economic competitors.

Nor do available statistics suggest that regulation has been a dominant cause of our declining productivity growth. New regulatory controls have not been the only important change at work in the U.S. economy since 1973; others include major demographic shifts, enormous increases in the relative price of oil, and a substantial decline in the rate of new capital formation. Several economists have attempted to isolate the effects of new health, safety, and environmental regulations on measured productivity and have concluded that the effects have been significant but not drastic. A fair summary of their results is that net expenditures under the new regulatory programs reduced measured productivity growth about ten percent annually during the 1970s (somewhat more than this in the mid-1970s and somewhat less during the late 1970s since the rate of increase in regulatory

expenditures was lower toward the end of the decade).[10] The results of these studies are strong evidence that environmental and workplace controls have somewhat diminished U.S. competitiveness: if our productivity growth had been higher, the costs (hence prices) of our goods sold in international markets would have been lower, regardless of regulatory activities in other countries. But the studies are not unambiguous proof that the controls were bad for the American economy, all things considered. All they show is that regulatory compliance diverted resources from uses measured on the national accounts to uses not measured on the accounts. The unmeasured uses might have been pure waste, or they might have produced truly valuable goods that weren't captured on the national accounts precisely because of the "market imperfections" giving rise to regulation in the first place. Part of the benefits of cleaner air and water—what we have called the "consumption margin" earlier in this paper—never gets reported because no one buys or sells it.

On the other hand, compliance expenditures are only a part of the economic costs of the newer regulatory programs, perhaps only a small part. Costs not in the form of measurable expenditures, such as the effects of deterred or altered business investment, either are missed by the productivity studies or are ascribed to other factors such as reduced capital formation. Probably the most important economic consequences of regulation today arise not from the level of compliance expenditures but from the increased risk which uncertainty over prospective regulatory requirements has injected into major capital and R&D investment decisions. Increased uncertainty means that firms delay capital investments, require higher rates of return when they do invest, and expand their facilities in smaller and more costly (at the margin) increments.[11] The economist Alan Greenspan writes that the two major factors adding to investment risk in recent years are inflation and regulation. He observes:

“A second, although somewhat smaller, contributor to higher-risk premiums is escalating business regulation. . . . Although [health and environment] regulatory changes have directly increased the cost of new facilities in a major way, this has not been the crux of the risk problem. Higher costs may inhibit investment but, once specified, they at least are no longer uncertain. Far worse for capital investment decision making is the fact that regulations may, indeed will, change in the future, and in a way that is unknowable at present. This, rather than known costs, has engendered uncertainty and hesitation among businessmen.”[12]

Two spectacular instances of the effect of regulatory uncertainty on business activity are the current circumstances of the coal and nuclear power industries and their major customer, the electric power industry, but less conspicuous examples pervade the manufacturing industries where firms compete directly in international markets. Moreover, as Robert Trandall has shown, federal environmental policies are heavily biased against newer and more productive industries.[13] Not only do the major pollution-control statutes establish tighter standards for new than existing facilities, but EPA enforcement penalizes industries where productivity growth is highest. Enforcement in industries such as chemicals, paper, and utilities is relatively more strict than pollution control considerations warrant, apparently because these industries can "absorb" control

costs with the least visible economic disruption. It is easy to see how this comes about as the natural result of EPA's efforts to minimize the political costs to itself of implementing the air- and water-pollution control statutes. EPA is inclined to be very tough and uncompromising when dealing with environmental issues in the abstract—when it is setting national air-quality goals and guidelines for emissions and effluents. But when it comes down to cases the agency is most likely to back off—to agree to waivers or postponements or simply to defer enforcement actions—where application of the general standards will close plants or produce other conspicuous results, which is precisely in the least productive industries such as steel where foreign competitors have already gained a competitive advantage over American producers. This bias in enforcement suggests that at least some of the measurable lost productivity from environmental controls is waste. More important, it suggests that the effects of regulatory uncertainty on new investment may be greatest precisely in those sectors of the economy which could contribute most to our competitiveness in international markets.

The effect of government regulation on the riskiness of private business decisions is the kind of problem economists can feel in their bones without being able to express in hard statistics. Among businessmen themselves, however, it probably constitutes the problem of regulation in the U.S. today. In part the problem is simply an accompaniment of the growth of the public sector, political decisions being inherently more ambiguous and uncertain than private ones. Yet we observe that, in other nations with large public sectors, regulatory policies are developed and implemented through close and continuing collaboration among representatives of private groups and government ministries. Policymaking in Japan is no doubt much less gentlemanly and "consensual" than it appears to the casual American observer. But it is hard to believe that any other system could match our own for creating uncertainty over the nature and impact of regulatory decisions. In the United States, it is not unusual for a single regulatory standard to be fought out for years in highly formal proceedings before hearing officers, a full commission, and a Court of Appeals, with several remands and revisions along the way, only to culminate in a cliff-hanger at the Supreme Court—which may start the whole process over again. The relatively higher (if unmeasurable) "uncertainty costs" of the American regulatory process may be the most important consequence of regulatory growth for our competitiveness in international markets.

IV. Consensual Alternatives to Adversarial Regulation

The idea that regulation in the United States can and should be recast along the more collaborative lines of other countries is due in part to examples such as the following from Ezra F. Vogel's *Japan as Number One: Lessons for America*. [14]
...MITI [Japan's Ministry of International Trade and Industry] officials do not approach their task legalistically. Their view is that rapidly changing conditions require more adjustment to individual predilections and special circumstances than is permitted by relying on legal precedent . . . Important issues therefore are not resolved by courts or even by legal criteria but are settled on the basis of more complex judgments about world trends, market potential, political and financial support, and individual company capacity... Whereas in the United States, regulatory functions are usually independent of

departments like commerce and work at cross purposes, in Japan the combination of regulatory and advisory functions within MITI helps insure that regulations are administered in a way consistent with the ministry's overall purpose.

The point implicit in this passage appears explicitly in recent work by scholars from other fields. For example, an article by Peter H. Schuck, an academic lawyer, compares the "litigation model" of regulatory decision-making unfavorably to the "bargaining model."^[15] He argues that litigation suppresses rather than evokes information pertinent to mutually agreeable decisions, accentuates policy disagreements, and is often unsuited to highly complex disputes which cannot be reduced to a single regulatory or judicial decision without oversimplification.

While Schuck believes that "direct bargaining between interests will probably never play a major role in the development of regulatory policy," he suggests that "[h]ybrids such as structured bargaining can be fashioned to conform to the needs of particular regimes and to draw upon the strengths (and minimize the weaknesses) of each model."

In the same vein, John Dunlop writes in a recent paper on "The Negotiations Alternative to Markets and Regulation."^[16]

...[N]egotiations have the virtue that they may reduce the high costs to the parties of litigation, reduce the time required for a resolution, as well as the uncertainty of the resolution. Further, the two sides are ordinarily capable of more imaginative solutions to problems than any outsiders, since they know presumably more about their problems and controversies than do others. It is also the case that many of the conflicts among groups are so complex, or groups are so powerful relative to each other, that increasingly they cannot be decided with a winner and a loser. The negotiations process often discovers a viable form of accommodation riot previously evident. Negotiations can be creative and problem-solving, while most litigation tends to be formalistic and sterile. Professor Dunlop suggests the regulatory process would benefit from a greater appreciation of the role of negotiations "between representatives of fairly stable or continuing organizations or groups over a period of time" and contributes a number of general rules drawn from the field of labor negotiation.

It is safe to say that none of these observers believe the United States could replicate national economic planning as practiced in Japan, or advocate a second attempt at federal regimentation of major industries in the style of the National Recovery Administration, or think that due process in its present, ornate American embodiment is only a lawyer's argument. They are united by frustration with the litigiousness of regulation in the U.S., and by a sense that our highly adversarial relationship between business and government is increasingly costly and anachronistic as our economic well-being increasingly depends upon our performance in world markets. They would have regulators act as mediators among many groups with divergent but legitimate interests, rather than as champions of one group against others, and they would have policy established with an eye toward workable compromise rather than toward what the courts might permit or require. But what would their "negotiations alternative" look like in practice?

A good example is set forth in a recent report of the Social and Economic Committee of the Food Safety Council, *Principles and Processes for Making Food Safety Decisions*.^[17] The report recommends the establishment of a Food Safety Assessment Committee, chaired by the Administrator of the Food and Drug Administration, and consisting of representatives of groups interested in food safety regulation—different segments of the food and drug industries, plus consumer, nutritional, and health organizations outside the industries. The Assessment Committee would be charged with fashioning agreements (in the form of recommendations to the Administrator) on general FDA policies and procedures in the food safety area, and with passing upon major regulatory issues such as approval or disapproval of new additives promising uncertain risks and benefits to consumers. The Assessment Committee's purpose would be avowedly political. Its members would be expected to act not as disinterested experts but as agents of particular interests and viewpoints. They would represent "continuing organizations or groups over a period of time" (Dunlop's term), which would encourage them, say, to swap approval of a new food additive for removal of an old one approved earlier, rather than litigating over both additives. The report does not say how representation on the Assessment Committee would be decided or whether its decisions would be by majority, unanimity, or something in between; nor does it recommend changes in other regulatory procedures or opportunities for judicial review. But the clear premise of the report is that the Assessment Committee procedure would lead to a more balanced evaluation of scientific evidence in particular cases, would facilitate practical compromises among competing interests, and would reduce the use of formal legal procedures before and after FDA Decisions.^[18]

During the past year a few "consensual alternatives" have even gotten past the proposal stage. One was President Carter's "Steel Tripartite Advisory Committee," consisting of representatives of the federal government, the major steel corporations, and the United Steelworkers of America. The Committee, meeting regularly throughout 1980, negotiated detailed recommendations for modifying the industry's air- and water-pollution control standards on the condition that saved compliance expenditures be invested in plant modernization.^[19] The modifications (and conditions) were recommended to Congress by President Carter shortly before he left office. Another is the Health Effects Institute, chaired by three academics but funded jointly by the automobile industry and EPA, which is to fund research into the health effects of automobile pollution. The avowed purpose of the Institute is to replace "adversarial science" with agreement between the industry and government over the scientific bases of automobile pollution standards.^[20]

Initiatives and proposals such as these run strongly contrary to the current drift of actual regulatory policy, which is to make regulation more formal and abstractly "rational" and to increase the isolation of the decision maker from the private parties in interest. An example of this tendency is the "freedom of information" and "government in the sunshine" laws which guarantee full publicity of all aspects of the regulatory process (thus encouraging posturing for the edification of particular constituencies and discouraging candor and compromise). Another is the increasingly stringent restrictions on "ex parte" communications between government officials and parties to regulatory proceedings (which guarantee that officials cannot act as intermediaries—imagine

if U.S. officials could only talk to Begin or Sadat when both were present). A third is the practice of regulatory agencies, at the behest of the courts, to publish increasingly elaborate accounts of the formal logic underlying their decisions, such as the methods employed to resolve uncertainties or contradictions in scientific evidence and the relationship of these methods to general statutory standards (imagine having to "explain" a wage settlement in such terms).[21] A fourth example is recently regulatory statutes, such as the Delaney Amendment and the Clean Air and Clean Water Acts, which hem the discretion regulatory officials with specific standards and deadlines or with commands that standards be set strictly according to the results of medical studies.

The implicit assumption in each of these cases is that there exists a "correct" decision to every regulatory controversy which can be achieved by vigorous and open application of disinterested intelligence. In this view, the policy-making process can only be sullied by close association between public officials and representatives of private interests—especially business interests—or any dialogue between them not couched in elevated terms of the public interest. A true consensus among competing private interests is probably impossible, and if possible it will be far from the "correct" decision since it will sacrifice unorganized interests not part of the consensus: therefore regulators should listen to the arguments of private parties in an atmosphere approximating that of a trial, and insofar as possible should base their final decisions on purely scientific considerations.

The "negotiations alternative" is equally at odds with the current direction of "regulatory reform" policy, exemplified by the White House regulation-review procedures instituted by Presidents Ford and Carter and now being expanded by President Reagan, and by the current proposal to establish a "regulatory budget" covering the costs imposed on the economy by the federal agencies and commissions.[22] Reform policies such as these are championed by economists and business groups interested in minimizing the economic costs of regulation.[23] The reforms seek to minimize costs, however, by requiring regulatory agencies to conduct extensive cost/benefit analyses of prospective regulations and to conform their decisions to the results of the analyses. There is some congruence in this variety of "regulatory reform" and some of the ideas for making regulation more collaborative; Professor Yogel, for example, is concerned to eliminate conflicts in economic policy among different agencies of the government, which is also a purpose of the White House review procedures. But the two approaches are fundamentally inconsistent. Policies that seek to harness regulatory decisions to the conclusions of economic analyses, like the policies mentioned in the previous paragraphs, put their faith in the possibility of making regulation more rational and scientific—cost/benefit analysis being the purest logical approach to arriving at economically "correct" regulations. To the extent the faith is justified, the result will be to minimize the net costs of regulation, for net costs are zero when costs and benefits are equilibrated at the margin. But if the faith is not justified—if, for example, cost/benefit analysis is simply used as another weapon in the battle of competing private interests—the result could be to delay the regulatory process even further and introduce additional uncertainty over the ultimate resolution of individual cases, thus increasing the true economic burden of regulation. A collegial body of interest-group representatives such as the proposed Food Safety Assessment

Committee would make use of the cost/benefit estimates along with other scientific evidence, but the results of its deliberations need not pass a cost/benefit test in any particular case; on the other hand, the results would presumably be a matter of far less uncertainty to the parties involved.

The conflict between the consensual approach and the rationalist/ adversarial approach to regulation is hardly a new phenomenon. The "negotiations alternative" is not a new discovery from another culture or a different area of domestic policy, but rather the oldest of regulatory ideas. The original idea that regulation should be carried out by a commission, rather than a hierarchical agency, was advanced precisely as a means of accommodating diverse interests in a reasonable fashion. The Federal Trade Commission conducted its work primarily through industry "trade practices conferences" during the twenties and thirties, which were never reviewed by a court and of which no formal record survives.[24] The Federal Communications Commission's regulation of the Bell System's rates and services consisted almost entirely of informal, unrecorded negotiations until the 1960's. And, as we have already noted, early safety and other product standards in the United States were also the result of informal government-industry collaboration.[25]

The current trend both of regulatory policy and "regulatory reform" is in fact a reaction to this kind of consensual regulation-by-negotiation, and the "negotiations alternative" is in turn a reaction to the excesses of reform. As James Q. Wilson explains[26]:

...In the 1960's, college and law school students were exposed to books and articles written by persons disillusioned with the regulatory commission, though not with the idea of regulation. Scarcely any student majoring in political science could have avoided hearing that regulatory agencies; were "captured" by industryA bright student would also have heard economists say regulation of entry and rates, as practiced by the ICC and the CAB, imposed costs on the consumer by keeping prices at above-market levels. At the same time, they would learn from each other, if not from their professors, that the environment was being degraded and the consumer "ripped off." These students would later enter government service carrying with them the political residue of these intellectual arguments: agencies should be reorganized to prevent their capture, regulation of entry and rate is of questionable value, and regulating the nature and quality of the product and the conditions of the workplace will produce substantial benefits. . . The result was a series of new agencies headed by single administrators (rather than commissions), committed to regulating quality rather than price, and governed by standards and deadlines affording minimum opportunity for the exercise of discretion.

In this light, the proposal for a Food Safety Assessment Committee appears not as a radical new departure but rather as a return to the commission model of regulatory decision making.

Today one can identify isolated attempts to resolve regulatory disputes through negotiation and consensus, but the prevailing intellectual winds described by Professor Wilson continue to blow strongly in the opposite direction. There is, for example, an instructive contrast between the way divisions of jointly-collected revenues have been

handled in the railroad and telecommunications industries.[27] In the telecommunications industry, revenue settlements have been a matter of private negotiation between the Bell System and the independent telephone companies under the loose supervision of the FCC, and the results have been satisfactory on the whole.

Following this tradition, when the FCC began to encourage "specialized common carriers" to offer long-distance transmissions services in competition with the Bell System in the 1970s, the terms of inter-connections between Bell and the new carriers were negotiated through the informal mediation of FCC officials rather than through litigation.[28] But in the railroad industry, revenue settlements among independent railroads have been determined by enormously complex and protracted "divisions" cases before the ICC (sometimes lasting over twenty years) which have taken a high toll in direct litigation costs and industry morale. One difference between the two cases is that the telecommunications industry is dominated by a single firm, which tends to encourage smooth negotiations by reducing transaction costs. But another difference is that the Interstate Commerce Act contains a number of specific provisions, absent in the Federal Communications Act, discouraging private settlements and encouraging recourse to regulatory process. For example, the ICC must give formal approval to all divisions formulas, and established divisions may be revised only by the Commission (after a full hearing and according to elaborate economic criteria) whenever any party opposes revision--which of course is always the case. Under the circumstances, it seems unfortunate that current legislative proposals to revise the Federal Communications Act would borrow from the railroad experience by making revenue settlements among telecommunications companies a matter of formal proceedings before the FCC.

The prospect is equally dim for making health, safety, or environmental regulation more consensual. The Food and Drug Administration, far from embracing anything like the proposed Food Safety Assessment Committee, has increasingly, delegated (de facto) decisionmaking responsibility in both the food and drug areas to panels of academic experts assembled by the National Academy of Sciences, apparently in an effort to minimize its exposure to political and judicial criticism.[29] In spite of the fuss made last fall over the Steel Tripartite agreement, the Clean Air Act and Clean Water Act still consist of an endless series of specific regulation-forcing and technology-forcing standards and deadlines; the new Administration in Washington may succeed in modifying some of these, but the basic structure of the statutes seems likely to remain intact.[30]

The Consumer Product Safety Act does contain a provision authorizing the Consumer Product Safety Commission to designate private groups as "offerors" to develop and propose product safety standards. This provision could be used to establish standards through collaboration among industry and consumer groups in the manner of the proposed Food Safety Assessment Committee, but when industry groups have asked to be designated as "offerors" of standards for their products, the Commission has generally reacted by designating consumer groups instead; this is what happened in the case of the lawn-mower standard, which was drafted by Consumers Union, and the CPSC's policy appears to be that industry groups should not be a part of the offeror process. At the same

time, the Federal Trade Commission is presently considering a regulation to require private standards-setting organizations (such as ANSI and ASIM, mentioned earlier) to observe most of the due process, formal-hearing, and written-decision requirements of administrative law in developing voluntary standards. It seems that safety regulation is becoming more rather than less legalistic, and that the scope for negotiations which might incorporate the knowledge and interests of manufacturers is narrowing.

The increasing formalism of regulation in the United States may in time run its course, and the more pragmatic approach described by Professors Dunlop, Vogel, and Schuck recover some of its former respectability. This could come about through sheer force of the example of other nations whose more collaborative regulatory procedures demonstrate their comparative advantage over ours in the international marketplace. Or it could come about through sheer exhaustion of the capacity of pure science to suggest "correct" resolutions of regulatory disputes. Clearly we have already reached the limits of science in many areas of regulatory policy. Linda Cohen has shown, for example, that the great increase (during the late 1970s) in the time required to obtain licenses for building and operating nuclear power plants resulted from the Nuclear Regulatory Commission's inability to resolve "generic" scientific issues in individual licensing cases—essentially unanswerable questions concerning very low probabilities of major accidents and long-term effects of very low levels of radiation. [31] Food and drug regulation is becoming an endless technological race between manufacturers improving the quality of their products and the FDA improving the sensitivity of its testing procedures. Thus, in the current (since the early 1970s) proceeding involving the use of acrylonitrile in beverage containers, the issue is whether any detectably acrylonitrile monomers can be shown to "migrate" from containers into beverages, making the container material a hazardous "food additive." During the most recent round of the proceeding, the manufacturer reduced the migration characteristics of his product by over one order of magnitude so as to comply with the existing FDA standard, only to be bested by the FDA's increasing the sensitivity of its migration testing procedures by two orders of magnitude. This led the reviewing judge to wonder whether the FDA had really based its disapproval of the product on the second law of thermodynamics, which predicts some migration between any two substances in contact. [32]

It is, however, unlikely in the extreme that we shall see a mere return swing of the pendulum to the kind of government-industry collaboration which characterized the New Deal and the earlier days of industrial regulation. Already economists such as Herbert Stein have warned of the "mushy syndicalism" represented by President Carter's Steel Tripartite Committee and other "New Industrialization" projects. The warning has great economic merit. The tendency for regulatory consensus to be achieved through narrow self-protection and self-promotion is well documented and understood. As mentioned earlier, the function of such disparate institutions as cost/benefit analysis and judicial rights to administrative due process and review has been to expose and counteract this tendency. And if formal institutions such as these are highly imperfect to the task, so is the informal alternative of including labor, consumer, or "public interest" representatives in the regulatory consensus. For example, it is commonly assumed that manufacturers will be too lenient in setting product safety standards if left to their own devices. But in

fact sellers will typically benefit from uniform safety standards that are higher than are desirable from the consumer's viewpoint; many state occupational licensing standards are cases in point. The reason is that uniform standards, while they may enlarge product markets as discussed in the first section of this paper, may also restrict the domain of product-quality competition among sellers, enriching sellers at the expense of consumers and retarding economic productivity.[33] There is a danger, then, here and in other areas of regulatory policy, that negotiations among established firms and organized consumer or "public interest" groups will produce an easy consensus over restrictive standards that are harmful to consumer welfare.

There is a political as well as economic aspect to this problem. Who will decide which groups are permitted to sit at the regulatory bargaining table, and on whose authority will they negotiate towards what will be, in the end, public laws. These problems are left unanswered in the proposals of the Food Safety Council and the American Bar Association, and in the structures of the Steel Tripartite Committee and the Health Effects Institute, since in every case all that is being negotiated over is recommendations to a regulatory official or to the Congress. But the incentives of interest-group representatives to negotiate seriously will obviously remain weak so long as they can resort to the courts whenever they are unhappy with the results of the bargaining process: if consensus-building mechanisms are simply an additional layer in the regulatory process rather than a substitute for major parts of it, they might produce little or nothing in the way of faster and more certain regulatory decisions.[34]

Indeed, the most effective—and perhaps essential—way to stimulate regulatory negotiations would be to eliminate all rights to judicial review of administrative decisions. A regulatory official in the unappealable position of the baseball umpire would be in the strongest position to prompt all sides to "be reasonable" and to produce quick and certain decisions. This, however, would constitute a radical transformation of the American political system: the right to judicial review of administrative decisions is essentially a constitutional right, the procedural concomitant of legislative delegation of important law-making functions to appointed officials. And let us suppose for the sake of argument that such a constitutional revolution, leading to hundreds of unelected legislative bodies making thousands of small regulatory decisions, were both possible and desirable from the standpoint of the society as a whole. Would businessmen, or representatives of any other particular group, be willing to gamble that they would be better off than under present arrangements? Business leaders might recall that it was their predecessors in the 1930s who first became disillusioned with the industrial-code program of the National Recovery Administration (and whose desertion led to the collapse of the entire effort) as a result of irreconcilable differences of interest among themselves and their fear of the growing power of organized labor in the NRA program.[35]

In the end our business community may simply learn to live with-and eventually acquire a stake in—the current regulatory style. There is some evidence that this is already happening. Major American firms and trade associations are becoming highly proficient at using cost/ benefit analysis and related techniques of policy analysis to their advantage

in EPA and OSHA proceedings. The Business Roundtable, as we have seen, favors cost/benefit analysis and expansion of the White House regulation-review program. In the long run this might not be such a bad thing. A good deal of the litigiousness of regulation over the past decade has simply been the result of rapid statutory change: productive negotiation is less likely and litigation more likely when there is uncertainty over underlying legal standards, and such uncertainty invariably accompanies new legislation. As business comes to master the techniques of policy making under the new health, safety, and environmental statutes, the "uncertainty costs" of regulation may greatly diminish.

Notes

1. Owners of foreign monopolies would, of course, be wealthier than owners of domestic monopolies. But even the domestic monopolies would earn as much as owners of resources employed in competitive markets, so investment in domestic and foreign monopolies would be equivalent. And the greater wealth of foreign monopolists would be exactly offset by the lesser wealth of their consumers.

2. See David Hemenway, *Industrywide Voluntary Product Standards*, Ballinger (1975), pp. 22-24, 73. Cf., Ellis Hawley, "Three Facets of Hooverian Associationalism: Lumber, Aviation, and Movies—1921-1930," Department of History, University of Iowa (mimeo., October 1980); Robert W. Hamilton, "The Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health," 56 *Texas Law Review* 1329 (November 1978).

3. *Id.*; pp. 70-71.

4. Sam Peltzman, "An Evaluation of Consumer Protection Legislation: The 1962 Drug Amendments," *Journal of Political Economy*, Vol. 81, No. 5 (1973), pp. 1049, 1080-81.

5. The Harvard Faculty Project on Regulation is conducting a study of the effects of the Airline Deregulation Act of 1976. The study has found that output is higher and prices lower in the air transportation industry than they would have been had regulation continued after 1976. While quality of service has diminished for some consumers, especially regular business travelers, this appears to be a transitional effect which will resolve itself as new airframes (more appropriate to the expanded market) are put into service. John R. Meyer, et al., *Airline Deregulation: The Record and the Prospects* (mimeo, Harvard Faculty Project on Regulation, forthcoming, 1981). Preliminary results are presented in a series of articles in the *Journal of Contemporary Business*, Vol.9, No. 2 (1980), pp. 69-122.

6. Kenneth J. Arrow and Joseph P. Kalt, *Petroleum Price Regulation: Should We Decontrol?*, American Enterprise Institute 198.

7. Henry G. Grabowski, John M. Vernon, and Lacy Glenn Thomas, "Estimating the Effects of Regulation on Innovation: An International Comparative Analysis of the Pharmaceutical Industry," *Journal of Law and Economics*, Vol. XXI(1) (1978), p. 133.

8. The environmental quality figure is from Council on Environmental Quality, *Environmental Quality: Eleventh Annual Report* (December 1980), p. 397; it includes public expenditures for municipal sewage treatment and private expenditures to comply with noise, pesticide, and land reclamation regulations as well as private expenditures to comply with air- and water-pollution controls. The occupational safety and health figure is derived from McGraw Hill Publication Company, *Eighth Annual Survey of Investment in Employee Safety and Health* (May 1980, which reported that such investments accounted for 1.6% of all capital investments in 1979. The U.S. Department of Commerce has since reported that 1979 capital investments totaled \$270.46 billion—1.6% of which is \$4.33 billion. This figure is not, of course, an "annual expenditure" figure; however, the McGraw Hill annual reports suggest that capital investments have been running at between \$2 and \$5 billion annually for several years and will continue at this level for several more years, and these amounts do not include operating and surveillance costs in meeting health and safety regulations.

9. William T. Burke, "International Trade Effects of the U.S. Environmental Program," paper presented at American Chemical Society Symposium on Critical and Strategic Materials, Carnegie Institution, Washington, D.C., June 5-7, 1978.

10. The most widely cited studies are those of Edward F. Denison, "Effects of Selected Changes in the Institutional and Human Environment Upon Output Per Unit Input," *Survey of Current Business*, January 1978, p. 21, and "Pollution Abatement Programs: Estimates of their Effect Upon Output Per Unit of Input, 1975-1978," *Survey of Current Business*, August 1979, p. 58. Denison's studies and several other are meticulously reviewed in Gregory Christiansen, Frank Gollop, and Robert Haveman, *Environmental and Health/Safety Regulations, Productivity Growth, and Economic Performance An Assessment*, paper prepared for Office of Technology Assessment, U.S. Congress, January 1980. An excellent discussion of the uses and limitations of the most recent productivity studies is Paul R. Portney, "Macroeconomic Models and the Impacts of Federal Environmental Regulation," *Natural Resources Journal* (forthcoming Spring 1981).

11. These effects are exacerbated if the known costs of regulatory compliance are great enough to make new capacity more costly per marginal unit of output than existing capacity. See Robert A. Leone and John R. Meyer, "Regulation, Inflation and the Business Investment Decision," *Harvard Business School* (mimeo, December 1979).

12. Alan Greenspan, "Economic Policy," from P. Duignan and A. Rabushka (eds.), *The United States in the 1980s*, Hoover Institution (1980), pp. 31, 36-37.

13. Robert W. Crandall, "Is Environmental Policy Responsible for Declining Productivity Growth?," paper presented at conference of Society of Government Economists, Atlanta,

Ga., December 1979; "Pollution Controls and Productivity Growth in Basic Industries," paper presented at conference on Productivity Measurement in Regulated Industries, Madison, Wis., May 1979.

14. Harvard University Press (1979), p. 78.

15. "Litigation, Bargaining, and Regulation," *Regulation*, Vol. 3, No. 4 (1979), p. 26. Schuck and other writers in this tradition draw upon Lon L. Fuller's influential essay on the shortcomings of adjudication in resolving complex or "polycentric" problems, "The Forms and Limits of Adjudication," 92 *Harv. Law Rev.* 353 (Dec. 1978).

16. August 1979 (mimeo, on file at the Harvard Faculty Project on Regulation).

17. Food Safety Council, Washington, D.C. (December 1979).

18. A general proposal similar to the Food Safety Council's appears in the Final Report of the American Bar Association's Commission on Law and the Economy. One of the Commission's twelve final recommendations is that the federal regulatory agencies "consider establishing policy consultation boards whose members would aid in focusing on and resolving policy problems. The boards should be broadly representative of concerned interests, including business, labor, users of regulated services, technical experts, government officials, and other affected groups." *Federal Regulation: Roads to Reform*, American Bar Association (1979), p. 100.

19. Report to the President by the Steel Tripartite Advisory Committee on the United States Steel Industry, Steel Tripartite Advisory Committee, United States Department of Labor (September 25, 1980); Jimmy Carter, "A Program for the American Steel Industry, Its Workers and Communities," Office of the White House Press Secretary (September 30, 1980). Michael B. Corash, General Counsel of EPA, has explained the work of the Tripartite Committee as a response to the adversarial structure of EPA's regulatory statutes, modeled on the Japanese experience. See the report of the Conference on Corporate Responsibility, Graduate School of Business, Stanford University, November 14, 1980 (forthcoming from Stanford University (title unknown), Fall 1981).

20. The announcement of the establishment of the Health Effects Institute was attended by top executives of all the U.S. automobile, truck and engine companies, the Administrator of EPA, and other federal officials. See "Health Institute to Study Motor Vehicle Emissions," *New York Times*, December 13, 1980, p.8.

21. The decisions and dicta of the U.S. Court of Appeals for the District of Columbia Circuit (which handles most petitions for review of federal regulatory decisions) have been a major cause of the increasing formality and complexity of regulatory procedures—both before and after the Supreme Court attempted to call a halt to the process in its 1978 Vermont Yankee decision. A vigorous account is Antonin Scalia, "Vermont Yankee: The APA, the D.C. Circuit, and the Supreme Court," 1978 *Supreme Court Review*, p. 345.

22. These policies are analyzed in Christopher C. DeMuth, "Constraining Regulatory Costs—The White House Review Programs," *Regulation*, Vol. 4, No. 1 (1980), p. 13, and "Constraining Regulatory Costs—The Regulatory Budget," *Regulation*, Vol. 4, No. 2 (1980).

23. The regulatory reform recommendations of the Business Roundtable emphasize strengthening the existing regulation-review procedures within the Executive Branch and increasing the agencies' obligations to engage in cost/benefit analysis; the Roundtable makes no mention of increasing the scope of informal negotiations among government officials and representatives of interested groups, although it recommends against public funding of participation by "underrepresented" interests in regulatory proceedings. See The Business Roundtable, "Regulatory Reform Legislation" (mimeo, January 1980).

24. Alan Stone, *Economic Regulation and the Public Interest*, Cornell University Press 1977, pp. 58-59.

25. *Supra* n.2

26. "The Politics of Regulation," from J.Q. Wilson (ed.), *The Politics of Regulation* (1980), pp. 386-7.

27. Robert C. Godbey, "Review and Cost Allocations: Policy Means and Ends in the Railroad and Telecommunications Industries," Harvard University, Program on Information Resources Policy (July 1979).

28. Kurt Borchart, "The Exchange Network Facilities for Interstate Across Interim Settlement Agreement," Harvard University, Program on Information Resources Policy (August 1979).

29. The use of NAS panels to make food and drug decisions more "scientific" is discussed in critical detail in Steven G. Breyer, *Regulation and Its Reform*, Harvard Faculty Project on Regulation (Publication R-79-04 December 1979), pp. 399-420 (forthcoming Harvard University Press).

30. An interesting comparison of the Clean Air Act with the "New Deal model" of wide regulatory discretion is Bruce A. Ackerman and William T. Hassler, "Beyond the New Deal: Coal and the Clean Air Act," 89 *Yale Law Review* 1466 (July 1980)

31. Linda Cohen, "Innovation and Atomic Energy," *Law and Contemporary Problems*, Vol. 43, No. 1 (1979), p. 67.

32. *Monsanto Co. v. Kennedy*, 613 F.2d 947 (C.A.D.C. 1979).

33. See Lacy G. Thomas, "The Economics of Producer Developed Safety Standards," Department of Economics, University of Illinois (mimeo., Feb. 1980); Hayne E. Leland,

"Quacks, Lemons, and Licensing: A Theory of Minimum Quality Standards," *Journal of Political Economy*, Vol. 87, No. 6 (1979) p. 1328.

34. Evidence on this point is that it has taken much longer to develop safety standards under the CPSC's "offeror" process than under the commission's internal administrative procedures—834 days versus 330 days on average. Comptroller General of the United States, "The Consumer Product Safety Commission Needs to Issue Safer Standards Faster," H.R. Doc. No. 78-3, 95th Cong., 2d Session (1977).

35. See Ellis W. Hawley, *The New Deal and The Problem of Monopoly* (Princeton Paperback 1969, pp. 66-71).